

Preface

During July 23–30, 1994, a Symposium on Classical and Quantum Billiards was held in the very convivial environment of the Centro Stefano Franscini, located at the top of the hill Monte Verità overlooking Ascona and the Lago Maggiore, Switzerland. It was jointly organized by the Theoretical Physics Institute of the École Polytechnique Fédérale de Lausanne and the Mathematical Institute of the Hungarian Academy of Sciences. The Symposium Committee decided to plan the meeting around the following main points:

1. To devote a meeting to the theory of billiard systems. As far as we know this was the first international meeting devoted entirely to billiards. The idea met with a great success. The Symposium was attended by over 100 participants from most of the continents, reaching the Centro's maximum capacity.

2. To cover both classical and quantum billiards from mathematical, physical, and numerical points of view. The aims were to review the state of knowledge in the field and to explore new avenues for future investigations. The meeting brought together mathematicians and physicists with a view to stimulating contact between them. The main topics covered included nonzero Lyapunov exponents, local and global ergodicity, Markov approximations and decay of correlations, polygonal billiards, ergodic vs. integrable behaviors, billiards in hyperbolic domains and arithmetic chaos, distribution of energy levels and random matrices, semi-classical quantization of chaotic billiards, trace formulas, scattering methods, scars, mesoscopic systems, etc. Though the related theories are at different stages of evolution, there was a lively interest in all directions, and the interaction of scholars with different backgrounds promised further progress.

3. To unite the features of a school and a conference in one symposium. The meeting consisted of plenary sessions with a total of 28 hours of talks scheduled during the week. Under the main topics, leading experts were requested to give tutorial lectures, which were followed by seminar lectures and talks on recent outstanding results. Participants also presented

their own work through 67 posters exposed during the week. The participation of Ph.D. candidates and postdoctoral fellows was strongly encouraged by the Symposium Committee by means of several grants.

4. To not prepare separate proceedings. As a consequence of the format of the meeting and in agreement with the invited speakers, the Symposium Committee decided to not prepare proceedings containing the lectures, the titles of which are given in the accompanying program. However, a collection of papers by some of the participants is published in this special issue of the *Journal of Statistical Physics* thanks to the generous offer of its general editor Joel Lebowitz. We are extremely grateful to him for this initiative.

The Symposium Committee is greatly indebted to the following sponsoring institutions, who made it possible to organize this event:

Académie Suisse des Sciences Naturelles
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Last but not least we wish to express our most sincere gratitude to Konrad Osterwalder, director of the Centro Stefano Franscini, for his deep interest in an constant support of the organization of this Symposium.

Symposium Committee: Ph. Choquard, M. Cibils (Lausanne), D. Szász, A. Krámlí (Budapest).